

**Water Taken from a Tree.**

"There is a tree which grows in Madagascar called the 'Travelers' Tree,' which is of the greatest service to the tired and thirsty travelers in that tropical climate," said Professor Wilbur G. Stebbins, of Richmond, to a St. Louis *Globe-Democrat* reporter. "This wonderful tree has no branches, the leaves growing from the trunk and spreading out like the sections of a fan. These leaves, of which there are generally not more than twenty-four on each tree, are from six to eight feet in length and from four to six feet broad. At the base of each leaf is a kind of cup containing about a quart of cool, sweet water. The natives save themselves the trouble of climbing the tree by throwing a spear, which pierces the leaf at the spot where the water is stored. The water then flows down into the vessel held beneath it, and the traveler is enabled to continue his journey, cheered and refreshed by the precious liquid nature has so kindly provided for his use."

**NEW LIFT BRIDGE, CHICAGO.**

Our engravings illustrate the new lift bridge lately completed over the Chicago River at South Halsted Street. Owing to the refusal of the Secretary of War to allow the placing of a pier central in the river, the same being considered an unnecessary obstruction, it became necessary to erect either a drawbridge, or a

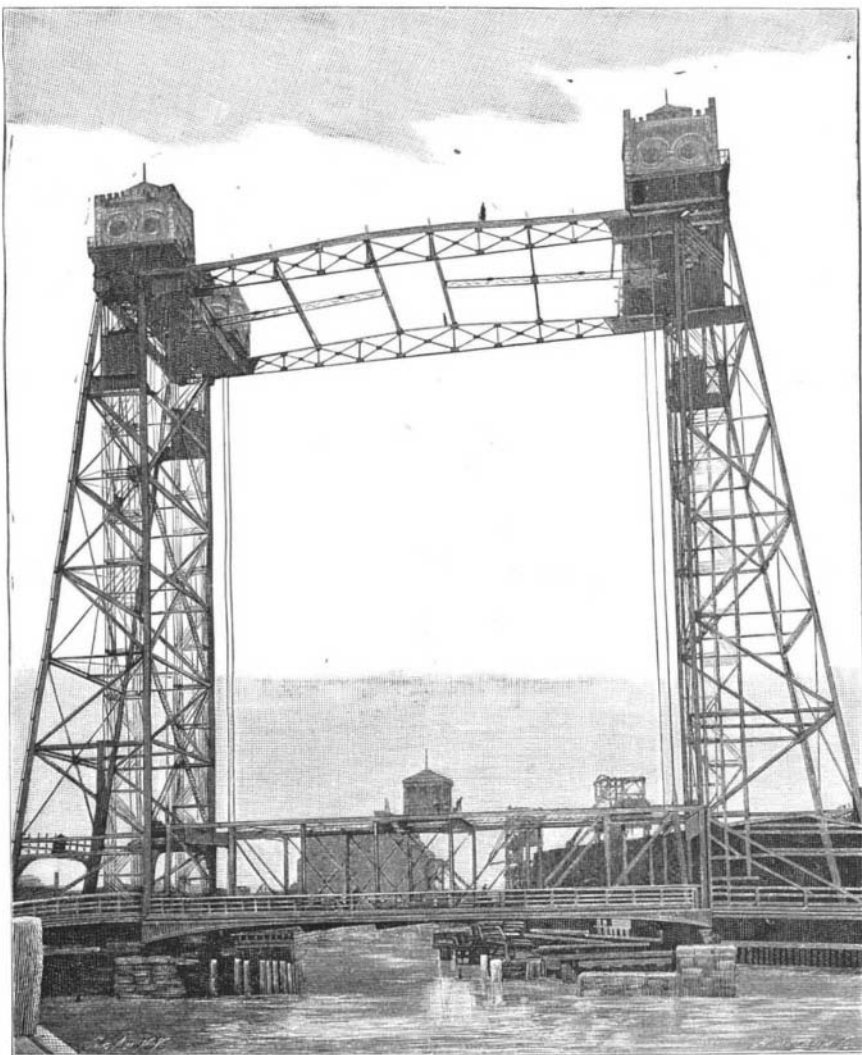
to the giant flowered *Helianthus Annuus*. It is supposed to get its name from its head turning to the sun, from east to west, every day, hence its French name "Toures;" or, more probably, it is from its resemblance to the old pictures of the sun surrounded by golden rays.

In the year 1596 Girard notices the plant in England, and calls it flower of the sun, or "Marigold of Peru," as it has quite a respectable antiquity even in civilized countries. An acre of land will contain 25,000 plants, at 15 to 20 inches apart. It has been found that they will produce 80 to 100 bushels of seed, that will yield from seven to eight quarts of oil to the bushel. The refuse of the seeds, after the oil is expressed, can be made into oil cake for fattening animals. The stalks when burnt for alkali give 10 per cent potassa. As the sunflower exhausts the potash in the land to a great extent, the ashes would be valuable to return to the soil with manure. The green leaves make good fodder or can be used as ensilage. If dried and burnt to powder, they are good to mix with beans for milch cows. The seeds are said to be more oleaginous than those of the flax plant, and combine all the qualities of the best olive oil. It can be used for lamps and it burns as well as sperm oil, without its smoke. Painters say it is superior to linseed oil, as it dries rapidly and spreads easily.

The stalks are full of a strong fiber, like that of flax or

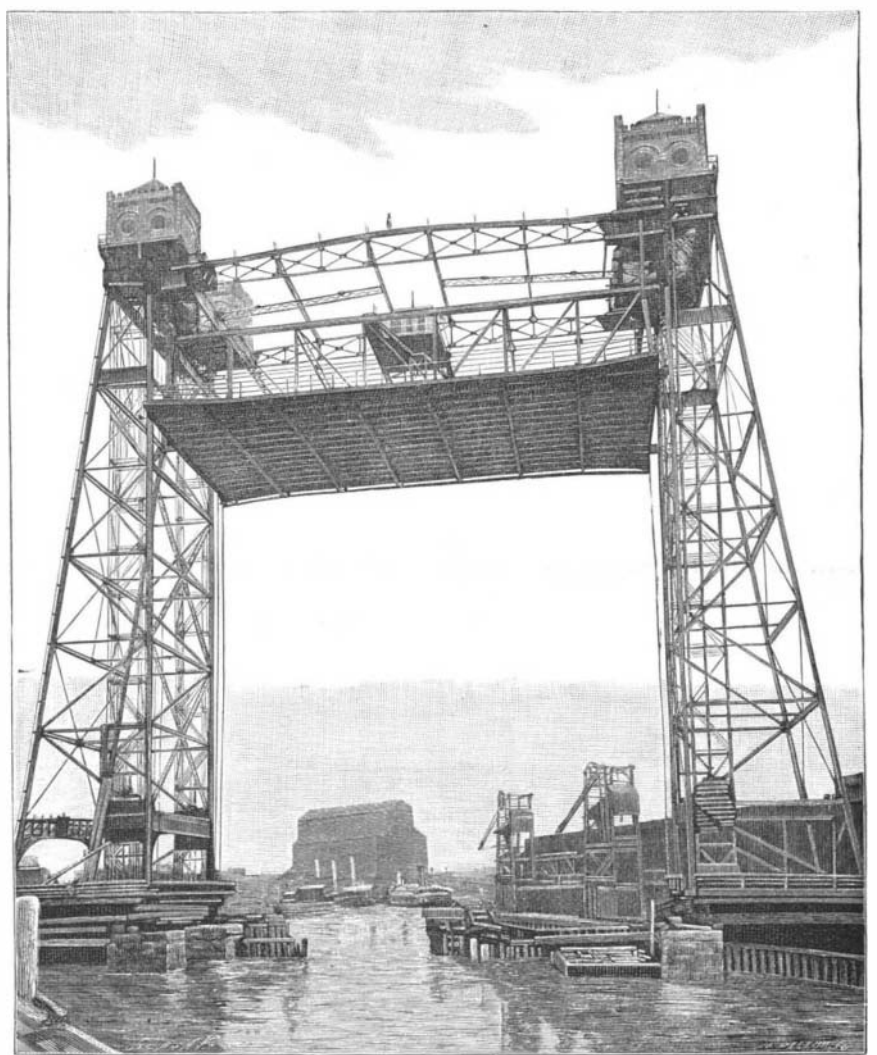
they were useless. At last a use was found for them. The president of a paper mill in Salina had difficulty in procuring straw with which to make paper. He looked upon the acres of sunflowers that grace the bottom lands of the Smoky Hill River, and went to experimenting. With a flatiron and hammer he pounded up the stalks and decided that the pulp would do. He arranged at once for a trial of the stalks in lieu of straw at his mill, and the results surprised not only those who witnessed the experiments, but himself as well. The fiber proved to be better than that of straw and produced better paper, as the toughness enabled them to make a larger amount of paper from a given amount of pulp. The gummy substance that destroys so much paper at the press rolls is absent, and the sheets run through driers and finishing calenders without sticking or tearing. The entire stalk of the sunflower is used, and the small cost of the raw material, being merely that of gathering, promises to make a new manufacture profitable. The mill is now turning out the unique product steadily and others will soon take it up. Thus far only express and hardware papers are being manufactured regularly, though sufficient paper of a better quality was made to print the *Daily Republican*, of Salina, on the day of the trial, October 27, 1893. Kansas seems to be only just learning the extent of her resources.

The seed of the sunflower given to chickens in the



CLOSED.

NEW LIFT BRIDGE, SOUTH HALSTED STREET, CHICAGO.



OPEN.

two-leaved bridge, or a lift bridge. The two first-named forms were found, for various reasons, to be objectionable for the Halsted Street locality, and that of the lift bridge found favor and was adopted. The method of construction will be understood by a glance at our engravings, which are from photos, given in the *Graphic*. Frame towers are erected, one on each side of the river, between which the bridge proper is made to rise and fall by means of cables and counterbalancing weights. This form of bridge has several special advantages. The cost is comparatively low, the expense of operation is small.

The bridge itself is similar to the fixed bridge. It is continuous from end to end; is exceedingly stiff; any type of floor can be used on it, even granite blocks, if desired; and is more free from the danger of injury from collisions with boats. It is believed the merits of the design are such that this first bridge of this type will be produced in many similar localities.

**The Sunflower and its Uses.**

BY NICOLAS FIKS.

This common but beautiful plant is familiar to everybody, and grows wild over our whole country. It will grow in almost any soil, and requires little in its cultivation. I shall endeavor to show in this article what a valuable plant it is, and what a profitable industry may be made by small farmers who have waste lands that could be profitably used for its cultivation at comparatively little expense. There are over fifty species of sunflowers known, but I shall refer more particularly

to the giant flowered *Helianthus Annuus*. It is supposed to get its name from its head turning to the sun, from east to west, every day, hence its French name "Toures;" or, more probably, it is from its resemblance to the old pictures of the sun surrounded by golden rays.

There is another item where this plant can also be made most profitably available. Wherever a field of sunflowers is grown its owner should set up an apiary. It is one of the best bee pastures known. Its luscious and numerous nectaries yield an abundance of the best and most palatable honey. Any one who has passed near a clump of sunflowers in full bloom must have noticed what a buzzing the bees keep up round them, and what a strong scent of honey they exhale. I trust that this information may induce many to give this culture a fair trial, and that we may yet see fields of sunflowers as common as those of oats or rye.

Mr. Hargen, writing from Abilene, Kansas, says: The sunflower grows all over that State very luxuriantly, and that the great fields of these plants are seen through the summer, forming beautiful seas of gold when in bloom. They have been the bane of the farmer, as they take possession of every uncultivated field and wave their yellow medallions from the tops of eight and ten foot stalks for six months in the year. The difficulty has been to get rid of these stalks when clearing the field for spring crops, as it was thought

winter answers as well as animal food for them, and helps to produce eggs early in the season when fresh ones are scarce, so profitable in every market. The young flower cups, when taken before the seeds are formed, and dressed like artichokes, are very palatable. One species, the *H. tuberosa*, a tall, wild plant, known as the Jerusalem artichoke, is also a useful plant when cultivated so as to increase the size of the tubers. They give a wholesome vegetable, and will prosper where potatoes fail and make a good substitute. Thus it will be seen that the sunflower is one of the most valuable crops the farmer can raise on his waste land, as it will grow where other crops fail.

**Electrolysis of Water Pipes.**

Corrosion of water pipes and other underground furniture by the ground return of electric railways continues to be observed. The recent annual report of the Brooklyn Electrical Subway Commission states that discoveries of corroded water and gas pipes have been of late so numerous that there seems no escape from the conclusion that metal pipes of all kinds extending below the surface along the routes of the trolley cars are being in many places destroyed by the ground currents. *Engineering News* says that at Peoria (Ill.) the water company have formally notified to the city authorities that their mains are being injured by the currents from the street railways; and unless these ground currents are removed, the company will refuse to further extend their mains, or be responsible for the maintenance of those now laid.